**TRANSMITTAL OF APPEAL BRIEF (Large Entity)**

Docket No.

3129

In Re Application Of: **HABELE, M.**

Application No.

10/511,949

Filing Date

10/21/2004

Examiner

PRESTON, E.

Customer No.

278

Group Art Unit

2834

Confirmation No.

Invention: **BRAKING DEVICE FOR AN ELECTRIC MOTOR**COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on
12/27/2005

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Typed or Printed Name of Person Mailing Correspondence

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United States Patent and Trademark Office

Examiner: Preston, E.

Art Unit: 2834

In re:

Applicant: HABELE, M.

Serial No.: 10/511,949

Filed: October 21, 2004

APPEAL BRIEF

January 12, 2006

Hon. Commissioner of
Patents and Trademarks
Washington, D.C. 20231

In response to the Advisory Action dated December 6, 2005, the Appellant
hereby respectfully submits his Appeal Brief:

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(1) Real Party in Interest

The real party in interest in the present application is the assignee of the application, Robert Bosch, GmbH, Stuttgart, Germany.

(2) Related Appeals and Interferences

There are currently no related appeals and interferences which will directly affect or be directly affected by or which have a bearing on the decision in the present appeal.

(3) Status of the Claims

Claims 1-5, 7, and 9-11 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/39912 to Habele et al. Claim 6 stands finally rejected under 35 U.S.C. 103(a) as being unpatentable over Habele et al in view of U.S. Patent No. 6,265,804 to Nitta et al. Claim 8 stands finally rejected under 35 U.S.C. 103(a) as being unpatentable over Habele et al in view of U.S. Patent No. 6,326,710 to Guenther et al.

(4) Status of Amendments

In response to the final rejection dated September 20, 2005, a Request for Reconsideration was filed. In this request, an amendment to claim 1 was proposed. The amendment was not entered on grounds that such amendment raised new issues that would require further consideration and/or search.

(5) Summary of Claimed Subject Matter

Independent claim 1 defines a braking device for an electric motor, comprising a rotor (10, 10') and a stator for a direct current series wound motor, and a brake element (20, 20') which is movable between a braking position and an operating position (specification page 6, line 30 through page 7, line 11; Figs. 1-3). Claim 1 defines further that a brake shoe (30, 30') which brakes the rotor (10, 10') in the braking position is mounted on the brake element (20, 20'), and that the brake shoe (30, 30') is mounted on the brake element (20, 20') on a trailing end relative to the direction of rotation of the rotor (10, 10') (specification, page 2, lines 8-11; Figs. 1-3).

Dependent claim 6 recites the additional features that the brake element (20, 20') and/or the yoke part (14, 14') on the leading end and/or another yoke part (16, 16') on the trailing end has a plurality of lamination packets (TP1-TP8), which each comprise a plurality of electrical laminations and which are disposed

axially successively relative to a pivot axis (specification page 3, line 27 through page 4, line 12; page 8, lines 23-35; page 9, lines 1-13; Figs. 2 and 3).

Dependent claim 8 recites the additional features that the brake element (20, 20'), in the braking position, rests on the trailing end on a fixed stop face (46'), and the stop face (46') has a predetermined angle of inclination relative to a radial direction, in order to attain a self-clamping of the brake element (20, 20') (specification, page 5, lines 1-24; page 10, lines 1-13; Fig 6).

(6) Grounds of rejection to be reviewed on appeal

- 1) Whether claims 1-5, 7, and 9-11 are unpatentable under 35 U.S.C. 103(a) over WO 00/39912 to Habele et al;
- 2) Whether claim 6 is unpatentable under 35 U.S.C. 103(a) over Habele et al in view of U.S. Patent No. 6,265,804 to Nitta et al; and
- 3) Whether claim 8 is unpatentable under 35 U.S.C. 103(a) as being over Habele et al in view of U.S. Patent No. 6,326,710 to Guenther et al.

(7) Argument

1) Claims 1-5, 7, and 9-11 are patentable over WO 00/39912 to Habele et al.

First, the Appellant notes that the German priority document (DE 198 60 396) of the cited reference WO 00/39912 to Habele et al is discussed as prior art on page 1, line 5 through page 2, line 4 of the present application. As noted on page 1, line 32 through page 2, line 11, the difference between the braking element as taught by the Habele et al reference and the braking element of the present invention is primarily the orientation of the rockerlike brake element relative to the direction of rotation.

Contrary to the Examiner's position, in the braking device of the Habele et al reference, the brake arm with the brake shoe is disposed on the rockerlike brake element ***on the leading end*** relative to the direction of rotation of the rotor, while the disengagement arm is oppositely disposed on the brake element on the trailing end. This is noted in the Habele et al reference on page 4, lines 17-20 and is claimed on page 9, claim 12.

The direction of rotation is depicted in Figure 1 of the Habele et al reference by an arrow designated with reference numeral 40, while the brake shoe 31 is clearly disposed opposite the direction of rotation. This arrangement of the brake shoe on the leading end offers the advantage that the braking force

acting on the brake shoe exerts a torque on the brake element as a result of which the contact pressure generated by the spring is reinforced.

In contrast, the present invention contemplates a braking device, in which the brake shoe is disposed on the brake element **on the trailing end** relative to the direction of rotation of the rotor.

The present invention is based on the recognition that the magnetic flux density on the yoke of the stator is greater on the leading end than on the trailing end. Thus, positioning the brake shoe on the leading end, as described in the Habele et al reference, leads to a greater reduction in power than positioning the brake shoe on the trailing end as defined in claim 1 of the present application. This effect overcompensates the self-reinforcement of the braking force as described in the Habele et al reference on page 4, lines 17-20.

The Habele et al reference fails to suggest that the device could be modified so that the brake shoe on the brake element is positioned **on the trailing end** relative to the direction of rotation of the rotor. Therefore, the rejection of claim 1 under Section 103 cannot stand. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art **suggested the desirability of the modification**. *In re Fritch*, 23 UPSQ 2d 1780, 1783-84 (Fed. Cir. 1992). Here, Habele et al does not suggest any such modification.

2) Claim 6 is patentable over the combination of Habele et al and Nitta et al.

Claim 6, because it depends from claim 1, includes all of the features of claim 1 and also defines that “the brake element (20, 20') and/or the yoke part (14, 14') on the leading end and/or another yoke part (16, 16') on the trailing end has a plurality of lamination packets (TP1-TP8), which each comprise a plurality of electrical laminations and which are disposed axially successively relative to a pivot axis”.

As argued above, the primary reference to Habele et al fails to suggest modifying the disclosed device so that the brake shoe on the brake element is positioned ***on the trailing end*** relative to the direction of rotation of the rotor. Nitta also fails to disclose or suggest this feature. Therefore, even if Habele et al and Nitta were combined, as proposed, the present invention would not be the result.

In other words, all of the features of claim 6, in combination with claim 1, are not provided by the cited reference combination. Therefore, again, the rejection of claim 8 under Section 103 is not proper.

3) Claim 8 is patentable over the combination of the Habele et al and Guenther et al references.

Claim 8, because it depends from claim 1, includes all of the features of claim 1 and also defines that “the brake element (20, 20'), in the braking position, rests on the trailing end on a fixed stop face (46'), and the stop face (46') has a predetermined angle of inclination relative to a radial direction, in order to attain a self-clamping of the brake element (20, 20')”.

As argued above, the primary reference to Habele et al fails to suggest modifying the disclosed device so that the brake shoe on the brake element is positioned ***on the trailing end*** relative to the direction of rotation of the rotor. Likewise, the reference to Guenther et al is silent with regard to this feature.


Thus, even if Guenther discloses a fixed stop face with the features of claim 8, when the Guenther device is combined with Habele et al, the present invention would not be the result, since neither reference even suggests the specific positioning of the brake shoe on the brake element on the trailing end relative to the direction of rotation of the rotor. In other words, all of the features of claim 8, in combination with claim 1, are not provided by the cited reference combination. Therefore, again, the rejection of claim 8 under Section 103 is not proper.

It is respectfully submitted that since the above reference combination does do not suggest the desirability of the claimed invention, such art cannot establish a prima facie case of obviousness as clearly set forth in **MPEP Section 2143.01**. Please note also that the modification proposed by the Examiner with regard to the reference combination would change the principle of operation of the prior art, so that also for this reason the references are not sufficient to render the claims prima facie obvious (see the last paragraph of the aforementioned **MPEP Section 2143.01**).

Conclusion

According to the standards articulated above, therefore, the final rejection of claims 1-5 and 7-11 under 35 U.S.C. 103 must be reversed. The Appellant respectfully requests that the honorable Board of Appeals reverse the final rejections of claims for the reasons set forth above and grant an allowance of this case.

Respectfully submitted,



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(8) Claims Appendix

Claims on appeal:

1. A braking device for an electric motor, comprising:
a rotor (10, 10') and a stator for a direct current series wound motor;
a brake element (20, 20') which is movable between a braking position and an operating position, wherein a brake shoe (30, 30') which brakes the rotor (10, 10') in the braking position is mounted on the brake element (20, 20'), wherein the brake shoe (30, 30') is mounted on the brake element (20, 20') on a trailing end relative to the direction of rotation of the rotor (10, 10').
2. The braking device of claim 1, wherein the brake element (20, 20') has a brake arm (26, 26') on the trailing end that carries the brake shoe (30, 30'), and has a disengagement arm (24, 24') on a leading end.
3. The braking device of claim 1, wherein the stator has a yoke part (14, 14') of a magnetically conductive material on a leading end and has a stator winding (18).
4. The braking device of claim 3, wherein the brake element (20, 20') is magnetically conductive and, together with the yoke part (14, 14') on the leading

end, encloses a motor air gap with the rotor (10, 10') that in the braking position, on the leading end, has an essentially constant gap width.

5. The braking device of claim 3, wherein between the yoke part (14, 14') on the leading end and the disengagement arm of the brake element (20, 20'), there is an air gap (32, 32'), and in the yoke part (14, 14') on the leading end, between the stator winding (18) and the air gap (32, 32') from the disengagement arm (24, 24') of the brake element (20, 20'), there is a constriction (34), which forms a magnetic resistor in the yoke part (14, 14') on the leading end.

6. The braking device of claim 1, wherein the brake element (20, 20') and/or the yoke part (14, 14') on the leading end and/or another yoke part (16, 16') on the trailing end has a plurality of lamination packets (TP1-TP8), which each comprise a plurality of electrical laminations and which are disposed axially successively relative to a pivot axis.

7. The braking device of claim 1, wherein bearing pin (22, 22') for supporting the brake element (20, 20'), the bearing pin (22, 22') being supported in a fixed bearing point by a positive-engagement connection that is secure against relative rotation.

8. The braking device of claim 1, wherein the brake element (20, 20'), in the braking position, rests on the trailing end on a fixed stop face (46'), and the stop

face (46') has a predetermined angle of inclination relative to a radial direction, in order to attain a self-clamping of the brake element (20, 20').

9. The braking device of claim 1, wherein the brake element (20, 20') is prestressed in the direction of the braking position by a compression spring (28, 28'), and a guide spur (48, 50) for the compression spring (28, 28') that protrudes into the compression spring (28, 28') is disposed on the brake element (20, 20').

10. An electric motor having a braking device of claim 1.

11. A machine tool having an electric motor of claim 10.